

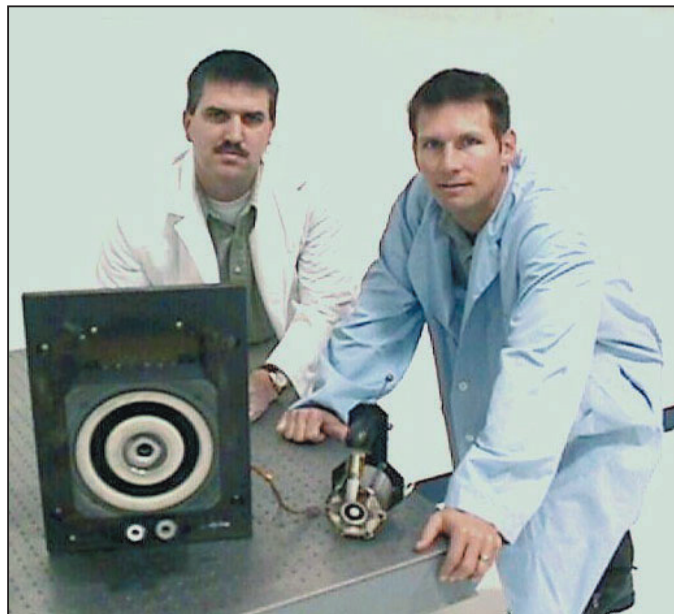


Air Force Research Laboratory|AFRL

Science and Technology for Tomorrow's Air and Space Force

Success Story

ELECTRIC PROPULSION RESEARCH TRANSITION HONORED



Researchers at the Propulsion Directorate's facilities in Southern California were honored for their research and technology transfer efforts on innovative electric propulsion space technology. The Federal Laboratory Consortium (FLC), the only government-wide forum for technology transfer, recently selected two researchers, Mr. Daron Bromaghim and Dr. J. Michael Fife, to receive the FLC Excellence in Technology Transfer Award.

Their research created an American capability to domestically manufacture a satellite propulsion system called the Hall Effect Thruster (HET). The honors were presented at the FLC's National Meeting held in San Diego, California. The FLC encompasses more than 700 federal research centers and labs in addition to their parent federal agencies and departments.



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Accomplishment

The innovative HET electric propulsion technology is intended to position and maneuver a satellite in orbit. The technology uses less propellant than chemical rockets, resulting in weight savings and the use of a smaller launch vehicle with a reduction in launch costs. Mr. Bromaghim and Dr. Fife have advanced HET technology to a commercially transferable and applicable status. Their research efforts and simulated space-altitude life studies on the 200 W and 2.5 kW class thrusters have validated their use for future scheduled satellite launches. The use of HET technology in space will provide additional performance data and enhance user confidence in the commercial satellite industry.

Background

Since the earliest days of space flight, scientists have predicted and pursued the use of electric propulsion for controlling spacecraft. The first practical electrical propulsion units were called Resistojets. Spacecraft requirements during that era often outweighed efficiency and weight restrictions. Many of the emerging systems were heavy and consumed large quantities of propellants, limiting their capabilities. Heavy-lift launch vehicles were often required to boost the satellites and their supporting propulsion systems.

Today, the increasing requirements of spacecraft control, orbital insertion, and operability in space, along with the need for long life, propellant efficiencies, and mission flexibility, have helped focus Air Force research efforts on new and innovative technologies. For more than 55 years, the directorate's men and women at Edwards Research Site, Edwards Air Force Base, California, have provided the nation with the rocket propulsion technology research, development, and testing needed to gain access to space and defend the country.

Propulsion
Awards and Recognition

Additional Information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (04-PR-22)